| MA 120-12 <br> $\S 4.3-4.7$ | QuíZ \#4 |  | same: |
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1. Let $f(x)=x e^{x}$ on the interval $[-1,2]$. Find the global maximum and minimum for $f$ on this interval. Do as much of the work exactly as you can, approximating only what you must on the calculater. Then sketch the graph of $f$ on this interval and label the critical point(s) and the global extrema. Use your graphing calculator for this. (7 points)
2. The graph indicates the cost $C$ (in dollars along the vertical axis) of manufacturing $q$ items (along the horizontal axis). Suppose that 500 items are being made. Assuming that all items manufactured can be sold, should the production be increased or decreased to decrease average cost. Explain. Then approximate the value of $q$ graphically that minimizes the average cost. (7 points)

3. Suppose the demand for a product is given by the equation $q=10000-0.1 p^{2}$ where $q$ is the quantity in units and $p$ is the price in dollars. Determine the elasticity when the price is $\$ 10$. Would increasing the price result in more revenue or less? Explain. (6 points)
